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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,292	09/29/2003	Hironori Hasei	9319G-000567	3126

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EXAMINER	
TADESSE, YEWEBDAR T	
ART UNIT	PAPER NUMBER
1734	

MAIL DATE	DELIVERY MODE
07/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/674,292	HASEI ET AL.	
	Examiner	Art Unit	
	Yewebdar T. Tadesse	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,6 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,6 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 5-6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiguchi et al (US 6,599,582) in view of Miyamoto et al (US 2002/0015800 A1).

With respect to claims 5-6, Kiguchi et al discloses (see Fig 13, column 14, lines 26-53 and column 4, lines 50-61) a device for forming a wiring (wiring patterns, see column 1, lines 21-23) comprising a liquid drop ejecting device for ejecting liquid drops onto a substrate by scanning on the substrate in at least first and second scanning movements; a surface treatment device for surface treating the substrate and a drying

unit (apparatus 301) for removing a dispersion medium contained in the liquid drop (hot air blast or lamp used to vaporize liquid component, see column 8, lines 45-48); wherein the ejected liquid drops are disposed on the substrate such that predetermined regular intervals are formed therebetween in the first scanning movement, the liquid drops ejected in the scanning movement are disposed to fill the predetermined regular intervals, the substrate is surface-treated by the surface treatment device so that a contact angle of the ejected liquid drops with respect to the substrate is in predetermined range (small contact angle) and a volume of the liquid drops ejected in the first scanning movement is capable of being equal to a volume of the liquid drops ejected in the second scanning movement. Kiguchi et al lacks specifically teaching the contact angle of the liquid droplet with respect to the substrate is in a range of 15° to 45°. Miyamoto et al discloses (see paragraphs 2, 9 16, 45, 60, 67 and 71; Abstract and Fig 1) a thin film manufacturing device (thin film patterned electronic devices) which is provided with a liquid drop ejecting device (ink jet head 10) for ejecting a liquid drop to a substrate and a surface treatment device for performing a surface treatment for a surface of the substrate (see paragraph 71 for treatment chamber) wherein the device for performing a surface treatment performs a surface treatment such that a contact angle of the liquid drops which are ejected from the liquid drop ejecting device is in a predetermined range of 15° to 45° (the contact angle of droplet applied to the substrate falls within 20°-50°, overlapping the claimed range). It would have been obvious to one of ordinary skill in the art at the time the invention to include the contact angle of the

liquid droplet with respect to the substrate is in a range of 15° to 45° in Kiguchi et al to form the desired component to the substrate surface.

With respect to claim 16, Kiguchi et al discloses (see column 17, lines 30-67) wherein the predetermined regular intervals are determined by controlling a relative speed of the liquid drop ejecting device with respect to the substrate; and a frequency of the ejection by the liquid drop ejecting device.

4. Claims 5-6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiguchi et al (US 6,599,582) in view of Duineveld et al (US 2002/0060518 A1).

With respect to claims 5-6, Kiguchi et al discloses (see Fig 13, column 14, lines 26-53 and column 4, lines 50-61) a device for forming a wiring (wiring patterns, see column 1, lines 21-23) comprising a liquid drop ejecting device for ejecting liquid drops onto a substrate by scanning on the substrate in at least first and second scanning movements; a surface treatment device for surface treating the substrate and a drying unit (apparatus 301) for removing a dispersion medium contained in the liquid drop (hot air blast or lamp used to vaporize liquid component, see column 8, lines 45-48); wherein the device ejects the liquid drops on the substrate such that a predetermined regular interval are formed in the first scanning movement, the predetermined interval capable of being twice a diameter of the previously-ejected liquid drop or less, the liquid drops ejected in the scanning movement are disposed to fill the predetermined regular intervals, the substrate is surface-treated by the surface treatment device so that a contact angle of the ejected liquid drops with respect to the substrate is in

predetermined range (small contact angle) and a volume of the liquid drops ejected in the first scanning movement is capable of being equal to a volume of the liquid drops ejected in the second scanning movement. Kiguchi et al lacks specifically teaching the contact angle of the liquid droplet with respect to the substrate is in a range of 15° to 45°. Duineveld et al discloses (see paragraph 19, 82 and 92) a thin film manufacturing device (EL device manufacturing system) which is provided with a liquid drop ejecting device (ink jet printing heads) for ejecting a liquid drop to a substrate and a surface treatment device for performing a surface treatment for a surface of the substrate wherein the device for performing a surface treatment performs a surface treatment such that a contact angle of the liquid drops which are ejected from the liquid drop ejecting device is in a predetermined range capable of being 15° to 45° (anti-wetting treatments such as plasma treatments, corona discharge and surfactants used to treat the surface of the substrate to attain contact angles of more than 50°, 60° , 70° or 80°). It would have been obvious to one of ordinary skill in the art at the time the invention to include the contact angle of the liquid droplet with respect to the substrate is in a range of 15° to 45° in Kiguchi et al to form the desired component to the substrate surface.

With respect to claim 16, Kiguchi et al discloses (see column 17, lines 30-67) wherein the predetermined regular intervals are determined by controlling a relative speed of the liquid drop ejecting device with respect to the substrate; and a frequency of the ejection by the liquid drop ejecting device.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Masuda et al (US 7,198,816) a drying unit for removing a dispersion medium (by hear treatment or laser (see Fig 4 and column 2,lines 45-48).

Response to Arguments.

6. Applicant's arguments filed on 05/21/2007 have been fully considered but they are not persuasive. As described above, Kiguchi et al discloses a drying unit for removing a dispersion medium contained in the liquid drop. Kiguchi discloses an apparatus (hot air or lamp) for removing (vaporizing) the liquid component. Similar drying units, including hot air and irradiating lamp, as Kiguchi are taught in applicants' invention (see pages 22 and 37). A drying apparatus used for vaporizing ejected liquid is known in the art for instance Masuda et al discloses (see column 16, lines 39-41 and column 16, line 64-column 17, line 3) such a drying unit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tucker Phillip can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YTT